Alliance Secure TCP for IBM i
Solution Brief

Townsend
SECURITY

Secure TCP Sockets Integration for the IBM i

Alliance Secure TCP provides you with secure TCP sockets data transfer between your IBM i and any other platform. You can use strong SSL encryption of your TCP sockets applications to protect sensitive data and meet compliance regulations such as PCI, HIPAA, GLBA, and Privacy Notification.

Alliance Secure TCP integrates with the IBM i Digital Certification Manager for SSL encryption. You can use native IBM i applications to create and distribute SSL certificates. User applications are easy to create and you do not need specialized knowledge of SSL communications. Alliance Secure TCP makes it easy by using standard IBM i data queues for your application interface.

Meet Compliance Regulations
Meet compliance regulations for encrypting data as it moves over your internal network and the Internet

Accelerated Deployment
Deploy solutions rapidly with no requirement for complex sockets programming

Real-time Integration
Implement real-time integration solutions using industry standard TCP and UDP sockets

Cost-Effective Solution
Reduce IT costs with an affordable, native IBM i TCP sockets solution

IBM i Hardware Acceleration
Maximize performance with SSL/TLS support integrated with IBM i hardware acceleration

www.townsendsecurity.com

Introduction

Alliance Secure TCP/IP is designed to assist the IBM i customer with connecting PCs, Internet applications, workstations, and other hosts to the IBM i using standard TCP/IP sockets communications. Customers can deploy .NET, VBNET, Java, Access, Internet Web, and other types of client/server applications that connect to the IBM i without special communications programming on the IBM i. Client applications send data to the IBM i via a TCP/IP sockets connection and receive data back from user-written RPG or Cobol applications. The client application programmer uses standard TCP/IP sockets functions to connect to the IBM i. Alliance Secure TCP provides the IBM i TCP/IP server interface and talks to IBM i applications via data queues. The IBM i RPG or Cobol programmer reads the client request from a data queue, performs application processing, and returns data to the client via a response data queue. Alliance performs all of the communications, data translation, and management functions. With Alliance, no communications expertise or ILE C/400 programming is required on the IBM i. Client/ server applications can be deployed quickly that take advantage of intranet and Internet networks.

Internet TCP/IP Connections

The Internet provides a way for your employees, business partners, and customers to communicate with you from anywhere in the world. Many types of Internet applications are available to help you do this. These include the Web, FTP, SMTP Mail, and others. You can also create your own applications that communicate over the Internet. These applications can be created with Microsoft Visual Basic, Access, C/C++, Delphi, and other tools to provide a customized interface to your host systems.

Alliance TCP/IP can help you integrate the IBM i with your Internet applications by providing server functions on the IBM i. You do not need to implement a Web server on the IBM i or open your IBM i to Internet access. If you are deploying Web applications on a UNIX or Windows NT server you can write CGI (Common Gateway Interface) or ISAPI (Internet Server Application Program Interface) programs that communicate with Alliance TCP/IP on the IBM i. The Web application can send a request to the Alliance and a response will be returned from your business application. Your IBM i business application can update or retrieve information in a local database, or can initiate communications with other systems to provide a response.

If you are deploying custom applications that communicate over the Internet, Alliance TCP/IP can be your application server. Alliance can handle multiple simultaneous requests

and provide rapid response to your remote applications. Using Alliance you can implement additional security checks for data access or update.

Private TCP/IP Networks

If you have a requirement for networked applications inside your company or on a private connection to a business partner, Alliance can assist you with this connection, too. The communications interface for private internets or intranets is the same as for the Internet. All of the functions described in the section above on the Internet are available for local intranet or private internet applications.

IBM i Technology Implementation

On the IBM i Alliance TCP/IP provides all of the TCP/IP communications interfaces to the TCP/IP network. Alliance configures the IP addresses and ports required by the network for the connection and provides automated management functions to start and stop communications support. Full communications trace and application logging functions are integrated with Alliance for ease of use and rapid development. Alliance provides all of the network interface functions, data translation, and application interfaces. IBM i developers can focus on the job of providing access to IBM i data and application functions.

Universal IBM i Client

Alliance TCP/IP also provides client services for IBM i programs. If your IBM i application needs to initiate a connection with another system you can use the Universal Client application shipped with Alliance or create your own client applications and register them with Alliance. The Universal Client receives address information and data, connects to the remote system, sends the data, receives a response, and returns the response to the IBM i application that made the request. You can implement complex IBM i client/server applications with no communications programming.

You can also create your own TCP/IP sockets applications and register them with Alliance. Alliance will then start and manage your application and provide optimum performance. If you do not have in-house communications support, Townsend Security can provide custom programming services to help you meet your communications needs.

Programming Interfaces - IBM i

Alliance is easy for an IBM i programmer to use. When transactions are received from the client Alliance translates the data to EBCDIC and writes it to a data queue. The IBM i programmer simply reads the transactions from the queue, performs application processing and database functions, and returns a response to a data queue. Alliance takes care of converting the data to ASCII, sending the data back to the client, and managing the communications session.

Alliance performs all IBM i communications configuration functions for the server application. The IBM i programmer does not need to configure line descriptions, controllers, or devices. In addition, Alliance performs all communications error detection and recovery functions.

In order to support problem determination, Alliance provides the option of detailed session logging. When logging is active all data and communications activity is written to a file. Individual sessions can be logged and there is a built-in communications trace facility. These functions can assist a programmer during the development phase.

Programming Interfaces - PC

A PC programmer can use .NET, VBNET, Java, Access, C/C++, PowerBuilder, and other products to develop applications. Any PC development product can be used that provides access to the Windows built-in WinSock communications APIs or for which there are third party tools to perform standard TCP/IP communications. In the Visual Basic environment, the programmer can use communications controls or the Windows Sockets APIs. The programmer uses these PC communications functions to connect to the TCP/IP network, send and receive data, and disconnect from the network. Microsoft and others provide sample applications and source code to assist in developing applications.

Programming Interfaces - Web

A Web developer can use CGI, Java, or .NET applications to communicate with Alliance on the IBM i. If the Web is implemented on a UNIX server the programmer can use CGI applications and the BSD Sockets interface to communicate. If the Web is implemented on a Microsoft Internet Information Server the developer can use either CGI or .NET to communicate with Alliance. In either case the programmer is using standard tools for communications on their respective platforms.

Programming Interfaces - UNIX

A UNIX programmer can use standard BSD Sockets to communicate with Alliance on the IBM i. This interface is included in all versions of UNIX and supported by all UNIX compilers. BSD Sockets is the standard for interplatform communications in a UNIX environment.

Performance Impacts

The Alliance communications modules are designed to have minimal impact on IBM i performance. The communications tasks do not consume CPU or disk resources while waiting for connections. All Alliance applications are written in the ILE C/400, and CL languages, and are optimized for IBM i performance.

Call set up times on TCP/IP connections are extremely fast and normally take a few milliseconds. Alliance loads the communications modules and makes them available while waiting for a connection. It is common for a complete transaction to take less than a second on the IBM i, depending on the speed and activities of the user application. A transaction includes the acceptance of an incoming connection, receiving data, processing by the IBM i application, returning a response to the client, and closing the connection.

On the IBM i Alliance runs in its own subsystem and with its own execution class. IBM i customers can tailor the operating environment without impacting other application systems. Since most transactions processed by Alliance will be interactive in nature, the execution priority on the Alliance jobs can be set safely at interactive priority. However, Alliance users can configure the execution priority of any job in the Alliance system.

Operational Impacts

Alliance is designed to run as an unattended application on the IBM i. The application runs in its own subsystem and can be started automatically during IPL by starting the subsystem. An auto-start job will initiate the communications jobs. The Alliance menu provides several options for viewing the status of communications jobs. A single interface allows for viewing the configuration status, job status, job log, and application log for any process in the system. During normal operation Alliance will not require operator intervention.

IBM i Hardware Requirements

The IBM i connects to the TCP/IP network with one or more Ethernet network interfaces. No other hardware is required for the IBM i.

Client Hardware Requirements

The client system needs a standard Ethernet connection in order to make a connection to the TCP/IP network. No other hardware is required at the PC to make the connection.

Support

Standard and Priority support plans are available which includes new releases, updates, and program fixes. A third party source escrow agreement is available.

Consulting Services

Townsend Security provides consulting services to assist customers in deploying client and server applications. These services are provided under a standard consulting agreement and are arranged as needed.

Townsend Security

Townsend Security provides data encryption & tokenization, key management, secure communications, and compliance logging solutions to Enterprise customers on a variety of server platforms including IBM i, IBM z, Windows, Linux, and UNIX. The company can be reached on the web at www.townsendsecurity.com, or (800) 357-1019.